HIGHER EDUCATION CAPITAL PLANNING
FOR NEW JERSEY'S FUTURE

EXECUTIVE SUMMARY

The Issue

New Jersey faces immediate pressure to preserve existing college and university campuses and enhance the capacity of its higher education system to address growing demands. In order to serve the current population of students, colleges and universities must maintain, renovate, and expand their physical plants where necessary and keep equipment and technology current to meet changing workplace needs. Research universities also must provide requisite needs for highly sophisticated laboratory space and state-of-the art equipment. Moreover, if New Jersey colleges and universities are going to serve a growing proportion of high school graduates, address the growing demand from nontraditional students, and extend greater access to underrepresented students, additional physical plant expansion and expenditures for technology infrastructure and equipment are crucial.

New Jersey's colleges and universities rely on state support to varying degrees. The state provides the primary support for 12 senior public institutions, and in partnership with county governments it provides support for 19 community colleges. The state also provides fiscal support to 14 independent colleges and universities with a public mission.

In 1998 approximately 35 percent of all recent New Jersey high school graduates did not attend college within 12 months of graduation, 36 percent attended a two- or four-year college or university in the state, and 29 percent attended college at an out-of-state institution. A total of 60 percent of the state's recent high school graduates who attended four-year institutions within 12 months of graduation did so out of state. Relatively few students enrolled in New Jersey colleges from other states.

Most of the colleges and universities in the state currently operate at or close to full capacity and are not prepared for the significant increase in students that is expected over the next eight years. If current college attendance patterns persist, the cumulative effects of the increased freshman classes between 2001 and 2005 will result in an enrollment increase of 9,430 students by 2005; the four-year period from 2005 to 2008 would generate an overall increase of 22,022 more students in 2008 than are currently enrolled in 2001. If the percentage of high school graduates who attend college in New Jersey within 12 months of graduation continues to grow, the cumulative effect over a four-year period would be significantly higher, reaching 36,800 additional students enrolled in 2008.

As the number of high school graduates rises across the nation, the large percentage of New Jersey's recent high school graduates who typically attend college out of state are likely to find limited spaces. In fact, the seven states that in 1998 enrolled almost three quarters of the students who left New Jersey are all grappling with similar capacity constraints. As a result, New Jersey has an exigent policy decision as to whether and how the capacity of its higher education system should be increased to serve the greater number of high school graduates annually who will seek a college education as well as the growing nontraditional student population.

Capital Planning for Higher Education

Statewide capital planning for higher education is a shared responsibility and is necessary to utilize resources effectively in addressing New Jersey's educational, workforce, and societal needs. The Commission on Higher Education, in collaboration with institutions of higher education across the state, has established a systemwide capital planning and reporting process to inform the coordinated development and implementation of state policies and funding mechanisms to assist in meeting capital needs. This report provides pertinent data regarding the existing physical plants and long-range plans of the colleges and universities. It also proposes key recommendations to guide the state's decision making and suggests potential funding mechanisms for consideration.

A recent capital planning survey completed by 42 of New Jersey's public and independent colleges and universities in the state reflects widely varying institutional physical plants, consistent with the different institutional missions. Overall, the campuses include over 15,000 acres, 2,000 buildings, and 54 million total gross square feet of building space. The institutions reported expenditures of over $310 million in 2001 for maintenance of these buildings and grounds, along with fire protection, property insurance, and utilities. In addition to maintenance expenditures, the institutions have an obligation to pay debt service on many of these buildings. In FY 2001 the amount of outstanding debt on which the colleges and universities were required to make payments was almost $1.6 billion. This excludes debt issued and paid for by the state or county governments on their behalf, but includes all individual institutional debt and any mandated contribution toward the payment of debt service on state issued bonds. These annual expenditures for maintenance and debt service put a significant impact on institutional operating budgets.

The survey also provides data regarding the institutions' seven-year capital plans to maintain and improve their campuses and meet growing demands. Section IV of the report discusses three categories of capital projects and potential funding mechanisms, recognizing that state support should vary among the different sectors and that capital needs must be addressed by a combination of state, county, institutional, and external funds.

- Preservation/Maintenance and Deferred Maintenance
  Based on national standards and the overall replacement value of over $9 billion at the 42 institutions, preservation and maintenance costs should range between $140 and $280 million annually. When annual maintenance is not attended to, a backlog of projects develops. The institutions report current deferred maintenance totaling approximately $541 million.

  As state institutions, the senior public colleges and universities rely primarily on direct state appropriations for annual maintenance. The report recommends implementation of the Commission's policy calling for an annual expenditure for maintenance at the senior public institutions of at least 2.25 percent of current replacement cost of academic facilities. The state should support a minimum of 2.0 percent, with the institution supporting the remainder.

- Construction and Major Renovation
  The 42 institutions identified capital projects for construction and renovation estimated in excess of $4.7 billion over the next seven years. This estimate does not include costs associated with security measures that may be mandated in response to recent terrorist activities. It is clear that the magnitude of this need will not be met through a single source or funding mechanism. State funds, county funds, institutional revenues, and external funds will be necessary. It will also be necessary to establish state policies and priorities related to construction and major renovation, which will strategically guide efforts to increase capacity and improve college and university physical plants.

  The Commission urges state policy makers to support stable funding sources that will assist all sectors, at varying levels, to meet the ongoing construction and renovation needs of the institutions. The state is encouraged to consider several funding mechanisms as potential means of providing state assistance, including the extension or expansion of existing debt-financed programs, the creation of new debt-financed programs, the creation of a higher education capital trust fund supported by an ongoing revenue stream, the establishment of an endowment fund, and the initiation of third party development arrangements.

- Equipment and Technology
  The institutions estimated a need of approximately $481 million for equipment and technology in the next seven years. Recognizing the constantly increasing demand for high-tech equipment for academic programs, institutional administration, and sophisticated cutting edge research, the state should consider raising the cap on the Higher Education Equipment Leasing Fund to $200 million and providing $100 million to the institutions every three to four years. Similarly, the state should consider renewing the 1997 Technology Infrastructure Fund when the $50 million bond issue is retired.

The Commission on Higher Education urges state policy makers to address fundamental challenges related to the physical condition and capacity of New Jersey's higher education system. Fluctuating demographics and the demands of the knowledge-based economy require the state to decide now how it will maintain its physical plant assets for the future and meet immediate and growing demands for higher education services. These issues directly impact economic recovery and ongoing competitiveness.

I. CONDITION AND CAPACITY OF THE PHYSICAL PLANT

Introduction

New Jersey faces fundamental policy decisions related to the physical condition and capacity* of its higher education system. Fluctuating demographics and the demands of the knowledge-based economy require the state to decide now how it will maintain its physical plant assets for the future and meet immediate and growing demands for higher education services. The state's response will be crucial to societal development and economic competitiveness.

Over the past several years, intense competition has emerged among states to build higher education capacity and excellence to meet human resource development and research needs necessary for a strategic advantage in today's global, information economy. New Jersey should follow the lead of other states that have already established higher education as a statewide priority and committed to major investments. For example, North Carolina approved a $3.1 billion bond issue to support higher education capital needs. Michigan recently committed $1 billion for a multi-university "life science corridor" to promote biotechnology research. Maryland committed to $1.23 billion over the next five years to meet capital needs. And Pennsylvania is creating an Infrastructure for Sustainable Innovation built around university clusters. This report provides pertinent information to inform New Jersey policy makers as they consider short- and long-term state policies and funding mechanisms to address higher education capital needs.

There are justifiable concerns about the condition of the physical plant and the capacity of New Jersey's colleges and universities. State and county governments, as well as institutions, have placed a substantial investment in higher education's capital assets; they have a concomitant interest in and responsibility for ongoing maintenance and development. Current and future students, faculty, and staff need safe, usable, well-maintained, and well-equipped classrooms, laboratories, offices, and residence halls. In addition, higher education's supporters, including alumni, parents, friends, foundations, and corporations, are concerned about the condition and capacity of the campuses they help to sustain.

Institutional governing boards as well as state and county entities charged as stewards of public resources strive to maintain an excellent learning and research environment to meet state and student needs. Statewide planning is therefore a shared responsibility and is necessary to utilize resources effectively in addressing New Jersey's educational, workforce, and societal needs. To guide planning efforts, the state must clearly articulate New Jersey's higher education policy and priorities, but the principle responsibility to assess and plan for capital needs rests with institutional governing boards and presidents.

The Commission on Higher Education, in collaboration with institutions of higher education across the state, has established a systemwide capital planning and reporting process. The following capital planning report includes an overview of current demographic and economic trends, comprehensive data on institutional physical plants and other capital assets, and long-term projections of capital needs and possible mechanisms to address them.

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* Capacity refers to the ability of institutions to provide higher education services; it relates to physical space, human resources, and technological capabilities.

Background

New Jersey's public higher education institutions include three research universities, nine state colleges and universities, and nineteen community colleges, which served a total of 266,921 full- and part-time students in 2000 (63,210, 79,126, and 124,585 respectively), the vast majority of whom were New Jersey residents. The 14 public-mission independent colleges and universities served an additional 57,586 students, with over 75 percent of their undergraduates from New Jersey. The state provides the primary support for the senior public institutions, and in partnership with county governments it provides support for the community colleges. The state also provides fiscal support to independent colleges and universities that have a public mission and assist in meeting students' higher education needs.

A relatively large percentage of New Jersey's high school graduates attend college out of state. In 1998 (the most recent year for which migration data are available), approximately 35 percent of all recent New Jersey high school graduates did not attend college within 12 months of graduation, 36 percent attended a two- or four-year college or university in the state, and 29 percent attended college at an out-of-state institution. A total of 60 percent of the state's recent high school graduates who attended four-year institutions within 12 months of graduation did so out of state. However, relatively few students enrolled in New Jersey colleges from other states.

During the past 20 years, the state has authorized the issuance of over $1.5 billion in debt-financed capital bond programs for the renewal and expansion of New Jersey's public and private higher education institutions (see Table 1). The state bond programs, which were enacted periodically over the years, applied to multiple sectors within the higher education community and often required an institutional match or contribution toward the payment of the debt service on the bonds. The institutions must repay more than 21 percent of the $1.5 billion over the life of the bonds. Institutions must typically rely on reallocations from other much needed operating accounts and increases in student tuition and fees to support the annual debt service. Institutions also rely on tuition and fees and operating accounts, as well as corporate and philanthropic contributions, to meet the institutional match required by some bond programs.

In partnership with county governments, the state also supported additional capital bond funds for the community colleges. The "Chapter 12" program created in 1971 applies only to the community college sector. It has served as an ongoing but limited source of capital bond funds for the two-year colleges. Like Chapter 12, several of the state's more recent debt-financed bond programs allow the state Treasurer to authorize additional bonds for the programs, provided the total outstanding principal does not exceed a statutorily established amount.

Table 1

Higher Education Capital Funding Programs

Bonds	2000 Dormitory Safety Trust Fund	1999 Higher Education Capital Improve-ment Program	1993/2001 Equipment Leasing Fund	1993 Higher Education Facilities Trust Fund	1997 Higher Education Technology Infrastructure Fund	1988 Jobs, Education & Competi-tiveness	1984 Jobs, Science & Tech-nology	1971- to present Chap. 12
Bond Amount	$90 million	$550 million	$100 million/ $100 million	$220 million	$50 million	$350 million	$90 million	*$330 million
Sector	Sr. Public Independent	Sr. Public Independent	Sr. Public Independent Co. College	Sr. Public Independent Co. College	Sr. Public Independent Co. College	Sr. Public Independent Co. College	Sr. Public Independent Co. College	Co. College
Payment Provisions	Institutions repay all principal	Sr. Publics pay 33% of debt service Independents pay 50% of debt service	Institutions pay 25% of debt service	State pays 100% of debt service	State pays 100% of debt service Institutions match 100%	State pays 100% of debt service Publics match 50% Independents match 100%	State pays 100% of debt service	State and county each pay 50% of debt service See note below

Note: *This is an ongoing fund that has been renewed periodically, and the cap has been increased several times. $330 million represents the current statutory limit on principal; the limit has increased from $80 million in 1971. The counties issue the bonds.

In addition to support for capital bonds, the state also has provided occasional direct capital appropriations in the state budget. The direct appropriations are primarily for maintenance and renewal at the senior public colleges and universities, which, as state institutions, fall within the framework of the state's Commission on Capital Budgeting and Planning. Unfortunately, the direct state appropriations have been sporadic and limited over the years, placing additional strain on operating funds at the state institutions and resulting in significant levels of deferred maintenance projects.

These two forms of public funding for capital expenditures (primarily bonds but also direct appropriations) have provided colleges and universities with substantial support for facilities, technology, and equipment. The institutions have also made significant investments in capital needs over the years. In addition to paying their share of the state debt-financed programs, the institutions have incurred considerable debt on their own to address capital needs that are not covered by public funding. Institutions generally finance dormitories and other revenue producing facilities without public assistance, and they rely on the revenues from such facilities to pay the debt service. Institutional bonds are also frequently necessary for construction or renovation of non-revenue producing facilities to complement state or county bonds or to fully fund a project. The institutions must rely primarily on operating aid and tuition and fees to meet their significant annual debt service obligations.

The state's rapidly changing demography and the technologically-driven, knowledge-based economy are imposing increasingly greater demands on higher education –

demands that require long-term planning, clear state policy, and adequate funding. While intermittent enactment of bond programs over the past 20 years provided a means to address specific areas of need as they reached crisis proportions, the state would benefit significantly from a stable capital program to monitor and support higher education's physical plant and the capacity of the system to meet state needs. The lack of statewide predictability of funding support for higher education capital needs has hampered and affected institutional planning.

Demographic and Enrollment Trends

Nationally, student demand for higher education is projected to increase substantially during the first decade of the new millennium. The United States Department of Education projects full-time student enrollment to increase by 19 percent and part-time student enrollment by 11 percent nationwide between 2000 and 2010. Both two- and four-year institutions are expected to accommodate increased enrollments, with slightly higher increases at four-year institutions. Between those same years, undergraduate enrollment is expected to rise 16 percent, graduate enrollment by about 11 percent, and first-professional enrollment by 13 percent. These growth projections, along with the need for lifelong learning and continual enhancement of workforce skills and knowledge, have stressful implications for higher education and its capacity to fulfill needs.

New Jersey faces immediate pressure to preserve existing campuses and enhance the capacity of its higher education institutions to address growing demands. The primary causes of the increased demands include: a greater number of new high school graduates seeking a college education; growth among nontraditional students (those who are not recent high school graduates) seeking to attend college to enhance skills, change careers, or generally expand their education; and the need to enhance higher education opportunities for Hispanic, African American, and Native American students, allowing them to participate fully in the new economy.

Growth in the number of high school graduates in New Jersey between 1996 and 2008 is projected to be among the highest in the nation, with an additional 23,861 high school graduates. Figure 1 (page 8) indicates recent growth patterns and the projected number of new high school graduates who will enroll annually in New Jersey colleges and universities between 2001 and 2008. The New Jersey growth projection assumes that the annual percentage of high school graduates who attend college within 12 months of graduation (66 percent) will remain constant and that the same percentage of graduates will attend college in New Jersey (36 percent). Based on those assumptions, the number of high school graduates enrolling as freshmen in New Jersey colleges and universities in 2008 is projected to be 6,770 greater than the number in 2001. That enrollment growth is projected to decline somewhat after 2008 and stabilize in 2012 with an additional 5,310 more freshmen enrolling annually than are currently being served. It is likely that a significant portion of the new freshmen at four-year institutions will seek to enroll as full-time residential students.

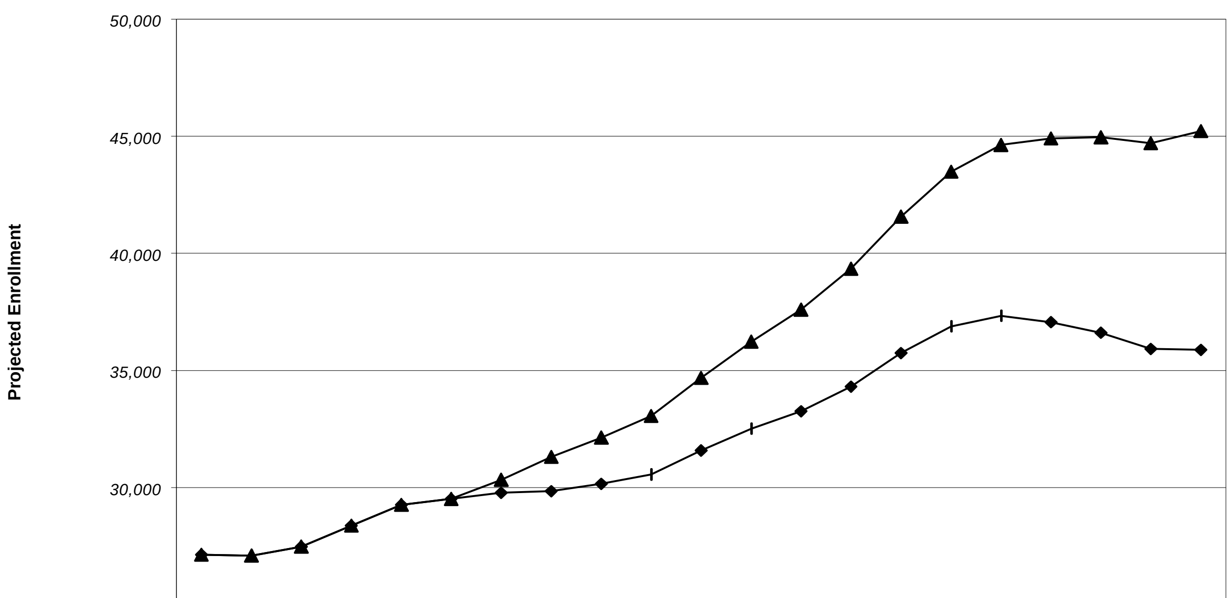
Under these circumstances, the cumulative effects of the increased freshman classes between 2001 and 2005 would result in an overall enrollment increase of 9,430 students by 2005. The growth in the number of high school graduates enrolling in the four-year period from 2005 to 2008 would generate an overall enrollment increase of 22,022 more students in 2008 than are currently enrolled in 2001.

The higher projection in Figure 1 assumes that the percentage of high school graduates who attend college in New Jersey within 12 months of graduation will continue to grow. The projection extrapolates enrollment growth based on the average actual increases in the number of students who attended college in New Jersey within 12 months of graduation between 1992 and 1999. The extrapolation reveals a potential increase of 11,580 new high school graduates attending New Jersey colleges in 2008, growing to 12,160 in 2012. The cumulative effect over a four-year period would be significantly higher, reaching 36,800 additional students enrolled in 2008.

It is important to note, however, that both the extrapolation and the New Jersey growth projection will be affected by such factors as the cost of college, the economy, nationwide distance learning opportunities, and other occurrences that impact the college going rate.

Figure 1

Projected In-State Enrollment of Current High School Graduates



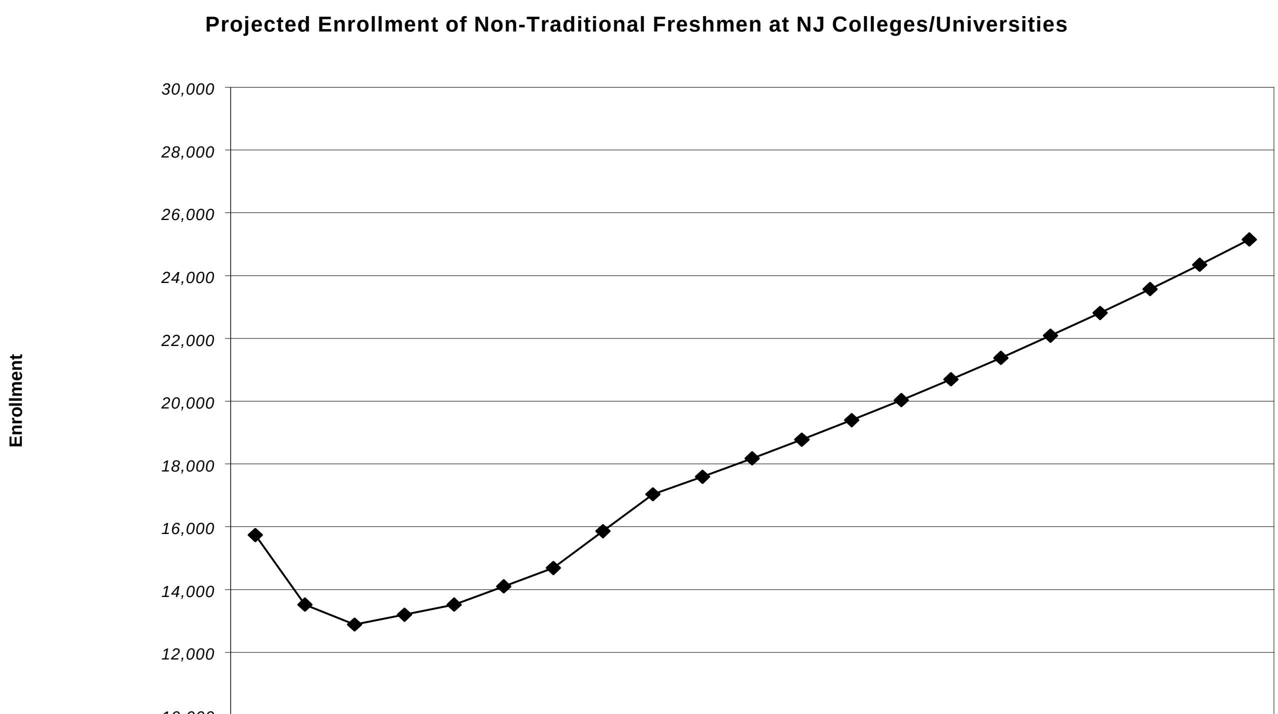
	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
NJ Growth	27134	27105	27486	28376	29265	29523	29780	29849	30162	30563	31587	32522	33259	34315	35741	36882	37336	37067	36610	35927	35874
Extrapolation	27134	27105	27486	28376	29265	29523	30335	31316	32135	33058	34679	36235	37596	39347	41563	43490	44632	44912	44953	44700	45216

Year

As the number of high school graduates rises across the nation, the large percentage of New Jersey’s recent high school graduates who typically attend college out of state (approximately 29 percent of the total number of high school graduates in a given year) are likely to find limited spaces available. For example, Connecticut, Delaware, Maryland, Massachusetts, New York, Pennsylvania, and Virginia (the seven states that in 1998 enrolled almost three quarters of the students who left New Jersey to attend college) also face large increases in high school graduates. Those states are all grappling with similar capacity constraints. As a result, New Jersey has an exigent policy decision as to whether and how the capacity of its higher education system should be increased to serve the greater number of high school graduates annually who will seek a college education.

Growth in nontraditional student enrollments will further strain the capacity of New Jersey’s colleges and universities to meet student and state demands. Figure 2 projects growth in nontraditional students; the projection reflects a 3.3 percent annual increase, which is the median growth between 1992 and 2000. This increase in nontraditional students is essential to meet the demands of New Jersey’s technologically driven, knowledge-based economy. To remain competitive, private and public sector employers depend on a highly skilled workforce. As a result, growing numbers of adults are enrolling in college to upgrade skills, change careers, obtain higher paying jobs, or pursue lifelong learning and professional development.

Figure 2



	FALL 1992	FALL 1993	FALL 1994	FALL 1995	FALL 1996	FALL 1997	FALL 1998	FALL 1999	FALL 2000	FALL 2001	FALL 2002	FALL 2003	FALL 2004	FALL 2005	FALL 2006	FALL 2007	FALL 2008	FALL 2009	FALL 2010	FALL 2011	FALL 2012
Non-Trad. Students	15735	13518	12883	13200	13518	14101	14684	15858	17033	17595	18176	18776	19395	20035	20696	21379	22085	22814	23566	24344	25148

<u>Response to Growing Demands</u>

New Jersey colleges and universities have increased their capacity to serve more students over the past several years by various means. Collectively, they offer over 1,300 distance education courses, and more than 40 complete certificate and degree programs are available via distance learning. In addition, institutions greatly enhanced the availability of evening and weekend classes and services, focusing on the need to provide flexible scheduling and off campus programs to meet student and employer needs. The colleges and universities are also aggressively working to enhance articulation and transfer between two- and four-year colleges and establish collaborative programs that serve higher education needs in underserved areas of the state. There has been limited expansion of the physical plant at some institutions as well. Lastly, an FY 2002 budget initiative provided targeted funds to increase the capacity of teacher preparation programs to assist in meeting the vast need for additional preschool to grade 12 teachers.

However, in order to serve the current population of students, colleges and universities must maintain, renovate, and expand their physical plants where necessary and also keep equipment and technology current to meet changing workplace needs. In addition, research universities must provide requisite needs for laboratory space and equipment critical to the attraction and retention of research-oriented faculty, the education or research professionals, and the connection of this work to economic development. Furthermore, if New Jersey colleges and universities are going to serve a portion of the growing population of high school graduates, address the growing demand from nontraditional students, and extend greater access to underrepresented groups, additional physical plant expansion and expenditures for technology infrastructure and equipment are crucial. State policies and funding mechanisms must be developed to efficiently and effectively meet both the immediate and future demands for higher education services.

II. UNDERLYING POLICY RECOMMENDATIONS

The Commission on Higher Education proposes four underlying policies to guide the state's determination of how to best meet short- and long-term higher education capital needs.

1. The primary responsibility for assessing and planning for institutional capital needs should rest with the colleges and universities. However, institutional use of state capital funds that support their missions should be consistent with clearly defined state higher education policy and priorities.

2. The state should promptly consider the growing demands on New Jersey's colleges and universities as described herein and establish a short- and long-range plan to assist in supporting the capital and related capacity needs, which have serious implications for residents as well as the state's economy and prosperity. As the state strives to provide broad access to high-quality education across the state, consideration should be given to expansion of campus facilities along with increased interinstitutional collaboration, improved articulation and transfer, decreased time to degree completion, enhanced access through distance learning, and flexible scheduling and program offerings.

3. The public research universities, state colleges and universities, community colleges, and independent institutions should be eligible for varying types and levels of state funding as New Jersey develops plans to address capital needs and increase the capacity of colleges and universities to meet burgeoning demands for higher education.

4. Institutional governing boards, the state, and the counties should share the obligations to meet higher education capital needs. State support should vary, based on the sector, institutional missions, and the type of capital need (preservation and maintenance, construction and major renovation, and equipment and technology).

- The state should direct essential capital support to its three public research universities and nine state colleges and universities.
- The state should continue to assist with capital needs at community colleges, which are supported by county governments as well.
- The state should continue to assist with capital needs at the independent institutions. These are private entities that assist in meeting the state's higher education needs.

The Commission on Higher Education will work with the institutions of higher education annually to update pertinent capital data and projected needs to further guide policy and funding decisions.

III. SYSTEMWIDE CAPITAL SURVEY DATA RESULTS

The public research universities, state colleges and universities (except Thomas Edison State College), community colleges, and independent institutions that receive funds under the Aid to Independent Colleges and Universities Act were asked to complete the Capital Planning Survey (Attachment A). Forty-two institutions[*] responded, and the data they provided are summarized in Attachment B. The survey data confirm the generally held understanding that there are varying needs among the sectors related to their roles within higher education. There are also variances within each sector based on the age, history, and mission of each individual institution.

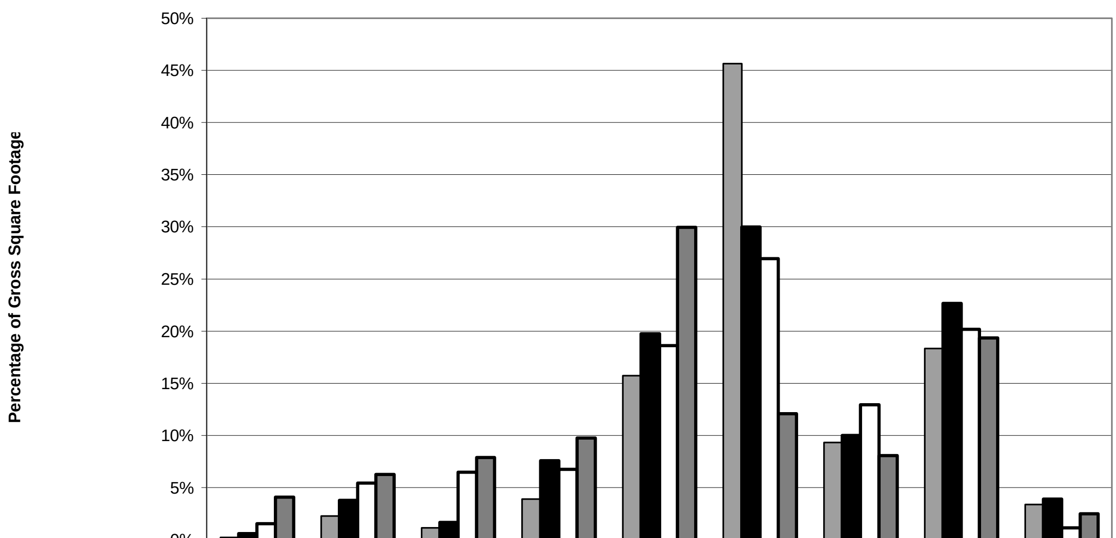
Current Facilities

The 42 colleges and universities that responded to the survey maintain a total of 64 campuses. The 19 community colleges maintain 28 campuses, the 8 state colleges and universities maintain 8 campuses, the three public research universities maintain 10 campuses, and the 12 independent institutions maintain 18 campuses. The diversity of the institutions is reflected in the diversity of their campuses. Occupying over 15,000 acres of land in total, campuses range from one-tenth of an acre at Raritan Valley Community College's Franklin Center campus to Rutgers' Agricultural Experiment station, which is 4,137 acres. The campuses are located in both rural and urban areas. Some colleges border residential or business neighborhoods, while others are surrounded by privately owned or publicly protected land. The institutions' fall 2000 enrollments ranged from approximately 1,000 students to almost 50,000 students. Clearly there is no "typical" campus.

[*] Princeton University and Stevens Institute of Technology chose not to participate in the survey. Thomas Edison State College was not included because the college's facility needs are met through acquisition or lease by the state and are maintained through the Department of Treasury.

The age of the college and university buildings tends to reflect the history of higher education in New Jersey (Figure 3). Many of the oldest buildings, some built over a century ago, are located on the campuses of the independent institutions, especially those founded by religious organizations or as small liberal arts institutions. About 4 percent of the facilities at independent colleges and universities were built before 1900. However, approximately 30 percent of the buildings at these institutions was constructed during the 1960s and about 22 percent after 1990. Rutgers University, with its history as a private, colonial college chartered in 1766, still maintains many of its older buildings.

Figure 3:
Age of Facilities



	Pre-1900	1900-1929	1930-1949	1950-1959	1960-1969	1970-1979	1980-1989	1990-1999	2000-present
Community Colleges	0%	2%	1%	4%	16%	46%	9%	18%	3%
State Colleges/Univ.	1%	4%	2%	8%	20%	30%	10%	23%	4%
Public Research Univ.	2%	5%	6%	7%	19%	27%	13%	20%	1%
Independent Inst.	4%	6%	8%	10%	30%	12%	8%	19%	3%

Note: Thomas Edison, Stevens and Princeton have been excluded.

The public institutions have grown dramatically since the mid-1900's. During the 1960s, the state colleges doubled the size of their facilities as they expanded their missions from teacher training institutions to more comprehensive colleges and universities. The largest single decade for construction was the 1970s, when 30 percent of present facilities was constructed, including two new colleges. Although construction declined during the 1980s, the eight state colleges and universities surveyed built 10 percent of their campuses during that decade. With institutional and state-backed funding, an additional 2.7 million square feet (23 percent of the current total) were constructed in the 1990s. The three public research universities also reflect the growth in higher education during the 1960s and 1970s. Although approximately 21 percent of the facilities were built before the building boom of the 1960s and 1970s, construction during the latter period tripled the capacity from just under 5 million square feet to 15.8 million square feet. An additional 34 percent of the current 24 million square feet was constructed from 1980 through 2000.

The building surge in the 1970s and the decline of the 1980s were less pronounced for the 19 community colleges. The age of their facilities reflects the creation of the colleges in the late 1960s and their expansion in the 1990s. More than 23 percent of the space at community colleges is at least 30 years old.

The different missions of the institutions are reflected in the types and uses of facilities they maintain. The community colleges and the University of Medicine and Dentistry are not residential, so they do not maintain housing. Overall, approximately one-third of the useable space at the remaining institutions is dedicated to student housing. Housing, as a percent of total facilities at residential institutions, ranges from 7 percent to 48 percent at the responding institutions.

Fifty-six percent of the usable space at community colleges is available to be assigned for classroom, laboratory, or office use, while the state colleges devote 44 percent of their non-residential space to these functions. The amount of space used for these function ranges from 72 percent of all usable space at non-residential institutions to 17 percent at a highly residential campus.

Nationally, the most often used guidelines for classroom use is 30 hours per week. On average, the New Jersey’s college and university classrooms are scheduled 37 hours per week and instructional laboratories are scheduled 28 hours per week. In addition to these scheduled hours, laboratories are often in use by students and faculty when they are not scheduled for class use. Classrooms are often used for student activities as well as instruction.

Each institution has a different amount of academic building gross square footage[*] (GSF) available per full-time equivalent (FTE) student. Much of this difference is attributable to the proportion of laboratory space on a campus, especially research laboratory space, and the mix of undergraduate and graduate students. Laboratory space is designed to accommodate fewer students per GSF and traditionally graduate level courses have many fewer students per class section.

Fifty percent of the reported laboratory space is located at the three public research universities (see figure 4) and 44% of graduate students attend these three institutions. As a result, the research institutions have an average of 299 academic GSF per FTE. Thirty-six percent of the state’s reported classroom space is at the community colleges (see figure 5), which enroll no graduate students. Their average of 91 GSF of academic building per FTE reflects those characteristics. Table 2 shows the average academic GSF per FTE by sector.

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[*] Academic gross square footage (GSF) is defined as the total floor area of structures used for academic and academic support functions, including classrooms, laboratories, faculty offices, libraries, studios, and offices for student services and institutional administration.

Figure 4:
Usable Space: Laboratory

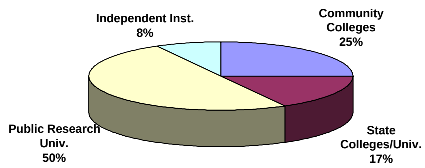
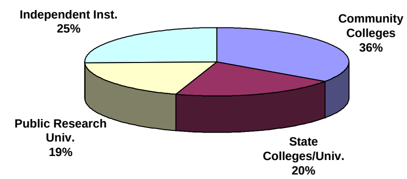


Figure 5:
Usable Space: Classroom



Note: Thomas Edison, Stevens and Princeton have been excluded

Table 2:
Academic Gross Square Footage per FTE Enrollment

Sector	Academic GSF	FTE	Ave. GSF/FTE
COMMUNITY COLLEGE	7,184,495	79,365	91
STATE COLL/UNIV	6,584,002	55,817	118
PUB RESEARCH UNIV	15,653,089	52,357	299
INDEPENDENT	6,641,169	35,373	188

Note: Thomas Edison, Stevens, Princeton and UMDNJ's University Hospital have been excluded.

In total, the 42 institutions maintain 2,005 buildings with approximately 54 million total gross square feet of building space. In FY 2001, the colleges and universities spent over $310 million in maintenance.* This includes maintenance of buildings and grounds, utilities, fire protection, and property insurance. In addition to maintenance expenditures, the institutions have an obligation to pay debt service on many of these buildings, particularly auxiliary enterprises (revenue producing facilities, such as dormitories and bookstores). In FY 2001 the amount of outstanding debt on which the colleges and universities were required to make payments was almost $1.6 billion. This excludes debt issued and paid for by the state or county governments on their behalf, but includes all individual institutional debt and any mandated contribution toward the payment of debt service on state issued bonds, such as the Equipment Leasing Fund.

Institutional Capital Plans

Institutions reported their capital plan requirements for FY 2002 through FY 2008 in six major categories: deferred maintenance, compliance (including Americans with Disabilities Act, life safety, and environmental), acquisition, construction (including new construction and major renovation), infrastructure, and capital equipment and technology infrastructure. A seventh category, annual preservation and maintenance, was calculated based on the estimated replacement value of the physical plants. Each individual

* The data for maintenance expenditure and institutional debt was not available for UMDNJ.

institution developed its capital plan based on the current condition of their facilities, forecast for future enrollments, demographic trends (such as residential or non-residential student population), and institutional missions.

Preservation /Maintenance and Deferred Maintenance
The overall current replacement value of the 42 institutions is over $9 billion. This is the estimate of the cost to replace the buildings' gross floor area at current construction costs in accordance with current building and public safety codes and standard construction methods. National standards use the replacement value to determine annual preservation and maintenance needs, calling for expenditures of between 1.5 to 3.0 percent of replacement value annually. Using those standards, preservation and maintenance costs should range between $140 million to $280 million annually. This significant investment is required every year to maintain the facilities at the 42 institutions in a manner that allows for their continued use as intended. When annual maintenance is not attended to, a backlog of projects develops, which are usually referred to as "deferred maintenance" projects. These are preservation and maintenance projects that were not undertaken in the year in which they were scheduled or first identified due to fiscal or other constraints. Failure to do these projects results in the physical deterioration or loss of value of the plant (capital) asset. The institutions report current deferred maintenance totaling approximately $541 million.

Compliance
The reporting institutions estimate that about $220 million will be needed over the next seven years to comply with federal or state laws and regulations. Such projects involve the Americans with Disabilities Act, life/safety standards, and environmental projects such as the abatement of hazardous materials, remediation of contaminated sites, and the mitigation of such conditions. These estimates were made prior to September 11, 2001, and do not include any costs associated with security measures that may be mandated by either state or federal agencies to address increased homeland security.

New Construction and Major Renovation
As the institutions developed their capital plans for the next seven years, they considered how they will address the projected increase in student enrollments, the rapidly changing technological environment, and in some cases changes or refinement of their missions. To meet these challenges, the 42 institutions that responded to the survey estimate that they would need approximately $2.7 billion to construct new facilities and $1.3 billion to renovate facilities. Of these amounts, approximately 26 percent is attributed to increasing enrollments. Included in the new construction total is $490 million, which is projected for housing-related construction to meet current and projected needs.

Acquisition, Infrastructure, Equipment and Technology Infrastructure
Institutional plans include purchasing, either outright or through lease/purchase, approximately $154 million of facilities and land. Infrastructure improvement projects that include the delivery of water supplies, energy efficiency improvements, and the construction of roads, parking lots, and sidewalks are projected to cost approximately $376 million during this seven-year period. Finally, the institutions plan for technology infrastructure and capital equipment projects with a total cost of almost $481 million.

IV. PLANNING TO ADDRESS CAPITAL NEEDS

In responding to the capital planning survey, the 42 institutions reported on seven specific categories of capital projects for FY 2002 through FY 2008. The resulting data are helpful in understanding the various types of capital requirements facing institutions. However, for the purpose of statewide planning, policy development, and consideration of potential funding mechanisms to support higher education capital needs, the Commission on Higher Education recommends consolidating those categories as follows: preservation and maintenance (including deferred maintenance), construction and major renovation (including compliance, infrastructure, and acquisition) and equipment and technology. These three broad categories encompass the various capital needs and provide institutional flexibility to meet diverse and often overlapping projects.

Consistent with the underlying policy recommendations in section II, the following discussion of institutional capital plans and potential funding mechanisms reflects the current distinction in the type and level of state capital support among sectors. The state is the primary source of capital support for its three public research universities and nine state colleges and universities. The state, in partnership with county governments, provides capital support for community colleges. And the state provides capital assistance to independent institutions with a public mission.

Preservation and Maintenance

The nationally recognized standard for maintenance expenditures at colleges and universities recommend that institutions annually dedicate between 1.5 and 3.0 percent of their current replacement value for maintenance and renewal. The Commission encourages all institutions to operate within that standard.

As state institutions, the senior public colleges and universities rely primarily on direct state appropriations for annual maintenance of facilities. Unfortunately, direct appropriations for preservation and maintenance at the senior public institutions have been sporadic over the years, and when funds were appropriated, they were very limited. The lack of funding dedicated to ongoing maintenance puts considerable stress on operating funds to address capital maintenance needs and often impacts on tuition and fees. Ultimately, many necessary maintenance projects are put off year after year, creating significant deferred maintenance backlogs. For each year that state funds are not appropriated the backlog increases substantially.

Consistent with national standards, the Commission on Higher Education recently proposed state policy calling for an annual expenditure for maintenance of at least 2.25 percent of the current replacement cost of academic facilities at the state’s senior public institutions. The state should support a minimum of 2.0 percent through direct annual appropriations for the 11 institutions that are eligible for capital renewal funds, with the institutions providing at least an additional 0.25 percent. For FY 2003, the state commitment would be approximately $73 million, with institutional revenues supporting an additional $9 million. A stable funding source to support this proposal is essential to preserve existing physical plants at the state institutions and avoid the deferral of additional projects.

Historically, the state has not provided direct appropriations for preservation and maintenance projects to the community colleges or independent colleges and universities. However, these institutions have participated in various state debt-financed bond programs, and institutional allocations were often used for projects that addressed preservation or deferred maintenance needs. As the state moves to fund one-third of the operating expenses at the community colleges and to fully fund the New Jersey's Independent College and University Assistance Act (ICUAA), additional institutional revenues should become available to assist in funding ongoing maintenance expenditures at those institutions and avoid future deferred maintenance.

Construction and Major Renovation

The 42 institutions identified capital projects for construction and renovation (which also includes compliance, acquisition and infrastructure projects) estimated in excess of $4.7 billion over the next seven years. It is clear that the magnitude of this need will not be met through a single source or funding mechanism. State funds, county funds, institutional revenues, and external funds will be necessary. It will also be necessary to establish state policies and priorities related to construction and major renovation, which will strategically guide efforts to increase capacity and improve college and university physical plants.

Most of the colleges and universities in the state currently operate at or close to full capacity. As a result, the institutions are actively engaged in efforts to satisfy increasing student demands by: enhancing flexibility to serve students through nontraditional means; incorporating technology and providing distance education; and advancing articulation and transfer and other means of collaboration among institutions. In addition, each institution maintains a long-range plan for capital projects necessary to address capacity needs.

The seven-year construction and major renovation plans vary significantly among institutions, consistent with their different sizes, locations, and missions. Overall, the plans include projects totaling approximately $1.1 billion (of the $4.7 billion) to address current space shortages and projected enrollment growth. Close to half of that amount is for housing-related construction to meet current and projected needs. The remaining $3.6 billion is planned to renovate or construct new facilities to address academic needs; provide student services; comply with state, federal, and other requirements; provide campus recreational facilities; acquire new property; improve campus infrastructure; and make other campus improvements.
The Commission encourages state policy makers to support stable funding sources that will assist in meeting the ongoing construction and renovation needs of the institutions. There are a number of funding mechanisms that could serve this purpose – some of which are already in place.

- The 30-year-old Chapter 12 debt-financed capital program has provided ongoing state and county funding assistance to address facility needs at the community colleges. The program has not been sufficient to meet all of the capital needs of the 19 colleges. Future increases in the cap would provide a means of addressing projected construction and major renovation needs at the community colleges.

- Consideration should be given to the development of a similar ongoing fund to address construction and renovation needs at the state’s senior public colleges and universities. The state plays the primary role in supporting capital construction projects at these institutions, and an ongoing bond fund would appropriately acknowledge the state’s unique relationship with senior public institutions.

- The Higher Education Facilities Trust Fund was established in 1993 to assist public and independent colleges and universities with new construction and improvement of instructional, laboratory, communications, and research facilities. The state appropriated $220 million in bonds to initiate the trust fund; debt service on the bonds is to be supported by proceeds from the state lottery. The fund was established as an ongoing trust fund that consists of proceeds from the lottery to pay the debt service, other monies appropriated by the state to the trust fund, and all interest and investment earnings on the trust fund. A statutorily established board was to review physical plant needs every three years and recommend additional monies or uses of the fund as determined appropriate. To date, the board has not met, and while there is a provision for the Treasurer to authorize additional bonds provided the principal does not exceed $220 million, no additional bonds have been issued. In September 2002, there is potential to issue about $85 million and stay within the original cap.

  The state should consider issuing additional bonds or fully developing the trust fund as it was originally conceived as an ongoing stable source of funds to assist institutions with capital construction and renovation projects.

- Consideration should be given to new systemwide debt-financed bond programs as a method to provide funds for capital needs. While one-time bond programs do not provide a stable, predictable funding source that promotes long-range capital planning, they have been helpful in meeting targeted statewide and institutional needs over the years. Stability can be added by building in a renewable clause that allows continual issuance of bonds up to a statutory cap, similar to that provided in the Higher Education Facilities Trust Fund. Any new systemwide capital bond programs should be designed to allow the institutions to address their highest priority needs consistent with broad statewide goals. All sectors should be eligible to participate in such programs, although a primary focus should be on the senior public colleges and universities, recognizing their status as state institutions.

NOTE: As additional debt-financed capital programs are considered, attention should be given to the impact that additional debt service requirements will have on the state and on college and university operating budgets.

- The state should also consider systemwide funding mechanisms that do not rely solely on bonding, such as a "Higher Education Capital Trust Fund" that is backed by an ongoing revenue stream. New Jersey has successful experiences from which to draw, such as the Transportation Trust Fund, the Garden State Preservation Trust, and others. A stable higher education trust fund would assist in long-term capital planning by institutions, which would be able to estimate future available resources and plan accordingly. It would also provide a more economical means of addressing capital needs by avoiding the significant ongoing interest charges. (The Higher Education Facilities Trust Fund described above could be more fully developed, as originally conceived, with a dedicated revenue stream to build and maintain the fund.)

- Existing examples of dedicated revenue sources used by other states to support the development of a "Higher Education Capital Trust Fund" include:

  Florida: Percentage of Gross Receipts – Generates $600 million/year for capital needs in school districts, state universities and community colleges.

  Illinois: Statutorily, a percentage of Riverboat Gaming funds will be available for athletic facilities. No revenues have been realized to date.

  Pennsylvania: State Owned University System receives a percentage of the Realty Transfer Tax.

- An additional stable revenue source that does not rely on bonds for systemwide capital needs is a state "Endowment" Fund. For example in Texas, the state established a Higher Education Assistance Fund and appropriates $225 million to it per year. Each year, $50 million of it remains in the fund to be saved until the fund is large enough to generate a stable source of capital funding at $175 million per year in interest.

- The current Higher Education Incentive Grant Fund, which encourages external capital funding donations by providing a state match, is another mechanism to consider, along with other state capital assistance.

- The state should also work with institutions to assure that state tax codes and other policies do not discourage innovative methods of meeting capital needs. For example, there is a recent trend toward third party development of facilities. This is particularly promising for the construction of auxiliary facilities, such as housing and recreation.

Equipment and Technology

The institutions estimated a need of approximately $481 million for equipment and technology in the next seven years. The $100 million Equipment Leasing Fund was established in 1993 to assist institutions in each sector to keep pace with capital equipment needs. The fund is renewable, providing the principal does not exceed $100 million. The bonds were fully retired last year, and a second $100 million was issued in 2001. At that time, the Commission pointed out the need for additional and more frequent state support. Recognizing the constantly increasing demand for high-tech equipment needed for academic programs, institutional administration, and sophisticated cutting edge research, the state should consider raising the cap to $200 million and providing $100 million to the institutions every three to four years.

Similarly, the state should consider whether or not to renew the 1997 Technology Infrastructure Fund when the $50 million bond issue is retired. This fund assisted institutions in each sector to enhance their campus technology infrastructure and improve interinstitutional communications.

Dedicated revenue streams are also a consideration in this area. The State of Texas established the “Telecommunications Infrastructure Fund,” which derives revenue through a tax on telephone and wireless services. It was part of a deregulation agreement with the telephone and wireless industry. Revenues are about $150 million per year for 10 years. Only a portion ($28 million in 2000) goes to higher education for telecommunications infrastructure projects.

These and other potential mechanisms should be carefully evaluated in determining the best means to provide stable, ongoing assistance to address higher education capital needs.

CLOSING

The Commission on Higher Education urges state policy makers to address fundamental challenges related to the physical condition and capacity of New Jersey’s higher education system. Statewide strategic planning is essential to address escalating higher education capital and capacity needs. These issues directly impact economic recovery and ongoing competitiveness.

This report provides pertinent data regarding the existing physical plants and long-range plans of the colleges and universities to inform policy discussions. It proposes key recommendations to guide the state’s decision making. It also suggests potential funding mechanisms for consideration. The Commission, in collaboration with the higher education community, will assist the Administration and Legislature to establish short- and long-term plans to maintain and improve the higher education system’s capital assets in order to achieve statewide education, workforce, and economic goals.